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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,777	03/25/2004	Eli Margalith		9602

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JOHN R. ROSS
PO BOX 2138
DEL MAR, CA 92014

EXAMINER

MCMILLAN, JESSICA L

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/810,777	MARGALITH ET AL.	
	Examiner	Art Unit	
	Jessica L. McMillan	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

Claims 1-4 8, 9 and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by *Kawakami et al. (US 2005/0226815 A1)*.

As to claim 1, Kawakami et al. illustrate a spectral imaging device with a narrow band spectrally tunable light source for obtaining multi-spectral images of a target, said device comprising: A) a tunable optical parametric oscillator (Figure 4, OPO) for producing short pulses of light at a plurality of selected narrow band wavelengths (paragraph [0065]) within a broad spectral range, B) a short pulse laser (Figure 4, Nd: YAG laser) driving said optical parametric oscillator, C) one or more optical components (Figure 4, excitation fiber and mirrors) for conveying or directing said short pulses of light to said target, D) a camera (Figure 4, intensified CCD camera) comprising a many pixel array detector, said camera being positioned to obtain multi-spectral images of said target (figure 4, CCD camera positioned to obtain multi-spectral images from sample below it) from said short pulses of light (figure 4, from excitation fiber) reflected from or transmitted through said target.

As to **claim 2**, Kawakami et al. illustrate the device as in claim 1 wherein said one or more optical components for conveying or directing said short pulses of light to said target is one or more optical fibers (Figure 4, excitation fiber).

As to **claim 3**, Kawakami et al. illustrate the device as in claim 1 wherein said one or more optical components for conveying or directing said short pulses of light to said target

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comprises refractive or reflective optical elements (Figure 4, the mirrors located between the OPO and the shutter).

As to **claim 4**, Kawakami et al. illustrate the device as in claim 1 wherein said camera is a gated camera synchronized with said optical parametric oscillator to maximize signal to noise ratio (Figure 4, synchronization and electrical delay).

As to **claim 8**, Kawakami et al. illustrate the device as in claim 1 wherein said camera is positioned to monitor reflections from said target (see figure 4, camera in position capable of monitoring reflections).

As to **claim 9**, Kawakami et al. illustrate the device as in claim 1 wherein said camera is in a position capable of monitoring transmission (see figure 4, camera in position capable of monitoring reflections).

As to **claim 11**, Kawakami et al. illustrate the device as in claim 1 wherein said camera is in a position capable of monitoring dichroism (see figure 4, camera in position capable of monitoring reflections).

As to **claim 12**, Kawakami et al. disclose the device as in claim 1 wherein said target is a pharmaceutical product (Paragraph [0011]). Additionally, claim 12 merely sets forth an example of intended use of the device, which does not limit said device.

As to **claim 13**, Kawakami et al. disclose the structure of the device set forth in claim 1. Claim 13 merely sets forth examples of intended use of the device, which does not limit said device.

Claims 1,2,4, 8, 9 and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by *Uttinger et al. (US 6,766,184 B2)*.

As to claim 1, Utzinger et al. illustrate a spectral imaging device with a narrow band spectrally tunable light source for obtaining multi-spectral images of a target, said device comprising: A) a tunable optical parametric oscillator (column 4, lines 8-9) for producing short pulses of light at a plurality of selected narrow band wavelengths (column 5, lines 18-20) within a broad spectral range, B) a short pulse laser (column 4, lines 8-9) driving said optical parametric oscillator, C) one or more optical components (column 3, lines 12-22) for conveying or directing said short pulses of light to said target, D) a camera (28) comprising a many pixel array detector, said camera being positioned to obtain multi-spectral images of said target from said short pulses of light (from fibers 16 connected to illumination sources 14 and 15) reflected from or transmitted through said target (18).

As to **claim 2**, Utzinger et al. disclose the device as in claim 1 wherein said one or more optical components (column 3, lines 19 and 20) for conveying or directing said short pulses of light to said target is one or more optical fibers.

As to **claim 4**, Utzinger et al. disclose the device as in claim 1 wherein said camera is a gated camera (column 5, lines 36-37) synchronized with said optical parametric oscillator to maximize signal to noise ratio.

As to **claim 8**, Utzinger et al. disclose the device as in claim 1 wherein said camera is positioned to monitor reflections (column 3, lines 34-36) from said target.

As to **claim 9**, Utzinger et al. disclose the device as in claim 1 wherein said camera is in a position capable of monitoring transmissions.

As to **claim 11**, Utzinger et al. disclose the device as in claim 1 wherein said camera is positioned to monitor dichroism (column 3, lines 34-36) of said target.

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As to **claims 12 and 13**, Utzinger et al. disclose the structure of the device set forth in claim 1. Claim 12 and 13 merely set forth examples of intended use of the device, which do not limit said device.

Claim Rejections - 35 USC § 103

Claims 5, 6, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Utzinger et al. (US 6,766,184 B2)* in view of *Mead et al. (US 2002/0114553)*.

As to **claims 5, 6, and 14**, Utzinger et al. disclose every claimed feature except the type of material used in the Optical Parametric Oscillator.

Mead et al. disclose a variety of materials that would be suitable for an OPO crystal such as Lithium triborate (LBO), beta-barium borate (“BBO”), cesium lithium borate (“CLBO”), etc. Mead et al. also disclose the use of a periodically poled material that could be used to lower the threshold for oscillation of the OPO.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of material for the OPO in order to meet the need of the user of the device.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Kawakami et al. (US 2005/0226815 A1)* in view of *Walling et al. (US 5,606,453)*.

As to **claim 7**, Kawakami et al. disclose substantially every claimed feature of the device. Kawakami et al. does not specifically set forth additional non-linear optical devices for extending spectral ranges of the device. Kawakami et al. illustrate an OPO and a YAG laser with a Third Harmonic Generator (THG) and a Second Harmonic Generator (SHG) in between them, but is silent to the function of the generators.

In the paragraph bridging columns 6 and 7, Walling et al. teach that the use of a second

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and third harmonic generator permits the OPO to operate at new frequencies.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to include the second and third harmonic generators in the device of Kawakami et al. in order to extend the spectral ranges of the device.

Response to Arguments

Applicant's arguments filed 14 September 2006 have been fully considered but they are not persuasive.

Arguments regarding the 102 rejections of claim 1-4 and 8-13 as being anticipated by **Kawakami (2005/0226815 A1)**:

Regarding the argument that Kawakami does not describe or suggest a device to obtain “multi-spectral images” is invalid. The single wavelength of 740 nm described in paragraph [159] is merely one of many wavelengths that could be used. This wavelength was chosen as part of a testing example. Paragraph [0065] states that the excitation light sources could be between 600-100 nm but preferably 750 to 900 nm. Figure 4 even shows more than one excitation wavelength (740 nm and 760 nm).

Arguments regarding the 102 rejections of claims 1, 2, 4 and 8-13 as being anticipated by **Utzinger et al. (US 6,766,184 B2)**:

The applicant's argument that Utzinger et al. use filters not required by Applicant's invention is not persuasive. It must be noted that Utzinger et al. disclose the invention as claimed. The fact that Utzinger et al. disclose additional elements not claimed is irrelevant.

The applicant's argument that Utzinger et al. use the optical parametric oscillator to produce light a narrowband wavelength to excite fluorescence on the cervix and not to perform

as that of the Applicant is irrelevant. Utzinger et al. disclose all elements as claimed by the applicant even though the use of Utzinger et al.'s invention differs from that of the Applicant.

Regarding arguments made against the 103 rejections of claims 5-7 and 14, the rejection stands as is.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. McMillan whose telephone number is (571) 272-5510. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on 571-272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLM

November 3, 2006



RENEE LUEBKE
PRIMARY EXAMINER